

CLAIMS

1. An imaging system for a user, comprising:

a mask adapted to be worn by a user which covers at least the eyes of said user and

5 has a viewing area covered by a faceplate;

an imaging subsystem mounted in fixed relation to said mask adjacent said faceplate,

said imaging subsystem adapted to capture images positioned in the viewing
area covered by said faceplate; and

an image storage system positioned outside said mask capable of storing said images,

10 said image storage system being in close proximity to said user and
operatively connected to said imaging subsystem by wireless communication.

2. The imaging system as claimed in claim 1 wherein said mask is a diving mask.

3. The imaging system as claimed in claim 1 wherein said image subsystem is
adapted to follow head movements of said user.

4. The imaging system as claimed in claim 1 wherein said imaging subsystem
includes a camera capable of capturing images using imaging techniques selecting from the
group consisting of analog, digital, infrared, laser, and a combination of said imaging
techniques.

5. The imaging system as claimed in claim 4 wherein said imaging subsystem
20 includes a camera selected from the group consisting of video camera and still-picture
camera.

6. The imaging system as claimed in claim 1 wherein:

said imaging subsystem includes a camera;

said imaging system further comprises an imaging subsystem control unit adapted to
25 control said imaging subsystem using wireless communication, said imaging
subsystem control unit adapted to be mounted on a body part of said user,
mounted on equipment carried by said user, or integrated with equipment
carried by said user; and

said imaging subsystem control unit includes a control switch adapted to perform one
30 of starting video image capture and taking a still-picture.

7. The imaging system as claimed in claim 6 wherein said imaging subsystem control unit is integral with a wrist-mounted dive computer and further includes a control switch adapted to end a video capture which is in progress.

8. The imaging system as claimed in claim 6 wherein said imaging subsystem control unit further includes at least one control switch adapted to turn at least part of said imaging system on and off by wireless command.

9. The imaging system as claimed in claim 1 wherein:

said imaging subsystem includes a wireless transmitter for transmitting said images to said image storage system by wireless communication; and

10 said image storage system includes a wireless receiver capable of receiving said images from said imaging subsystem by wireless communication.

10. The imaging system as claimed in claim 9 wherein said image storage system includes:

a video compression unit operatively connected to said wireless receiver and capable of compressing said images into compressed images; and

an image storage subsystem operatively connected to said video compression unit and capable of storing said compressed images.

11. The imaging system as claimed in claim 1 wherein:

said imaging subsystem includes a second wireless receiver; and

20 said image storage system includes a second wireless transmitter capable of transmitting control signals to said second wireless receiver by wireless communication, said control signals including a first signal to turn said imaging subsystem on and off and a second signal to start and end an video image processing or take a still-picture.

25 12. The imaging system as claimed in claim 1 wherein said image storage system is adapted for mounting on a body part of said user, mounting on equipment carried by said user, or insertion into a pocket of a buoyancy control device vest worn by said user.

13. The imaging system as claimed in claim 1 wherein said imaging system further comprises:

30 a first power supply that provides power to said image storage system; and

a second power supply distinct from said first power supply, that provides power to said imaging subsystem.

14. The imaging system as claimed in claim 13 wherein:

said first power supply includes a first solar device for generating solar power.

15. The imaging system as claimed in claim 1 further including:

a liquid crystal display (LCD) mounted inside said mask and in fixed relation to said
5 faceplate, said LCD capable of displaying said images for viewing by said
user.

16. The imaging system as claimed in claim 1 further including a fisheye lens
mounted in front of said imaging subsystem, wherein said imaging subsystem is adapted to
capture fisheye images using said fisheye lens.

10 17. An imaging system, comprising:

a diving mask adapted to be worn by a user which covers at least the eyes of said user
and has a viewing area covered by a faceplate;

15 an imaging subsystem mounted in fixed relation to said diving mask adjacent said
faceplate, said imaging subsystem adapted to capture images positioned in
front of said faceplate and to follow head movements of said user, said
imaging subsystem including

a camera capable of capturing images using imaging techniques
selecting from the group consisting of analog, digital, infrared,
laser, and a combination of said imaging techniques, said
camera is selected from the group consisting of video camera
and still-picture camera, and

a wireless transmitter for transmitting said images by wireless
communication; and

20 an image storage system positioned outside said diving mask capable of storing said
images, said image storage system being carried by said user and operatively
connected to said imaging subsystem by wireless communication, said
wireless communication including at least one of radio frequency
communication, infrared communication, acoustic communication, laser light
communication, and visible light communication, said image storage system
including

25 a wireless receiver capable of receiving said images from said wireless
transmitter by wireless communication, and

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an image storage subsystem operatively connected to said wireless receiver and capable of storing said images, said image storage subsystem including a memory system selected from the group consisting of solid state memories, optical disk storage, laser disk storage, computer disk storage, and mini-video tape storage.

18. A method for wireless imaging, comprising:

providing a mask adapted to be worn by a user which covers at least the eyes of said user and has a viewing area covered by a faceplate;

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capturing images positioned in front of said faceplate using an imaging subsystem;

transmitting by wireless communication said images to an image storage system capable of storing said images, said image storage system being positioned outside said mask and in close proximity to said user.

19. The method as claimed in claim 18 wherein transmitting by wireless communication said images to an image storage system includes:

transmitting said images to a wireless receiver associated with the image storage system;

compressing said images into compressed images using a video compression unit operatively connected to said wireless receiver; and

storing said compressed images using said image storage subsystem

20. The method as claimed in claim 19 wherein storing said images using an image storage subsystem includes storing images using a solid state memory system.

21. The method as claimed in claim 18 further comprising storing images in a device adapted for location within a pocket of a buoyancy control device worn by the

22. The method as claimed in claim 18 further including displaying said images on a liquid crystal display (LCD) for viewing by said user, wherein said LCD is mounted inside said mask and in fixed relation to said faceplate.

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23. A method for wireless imaging, comprising:

providing a diving mask adapted to be worn by a user which covers at least the eyes of said user and has a viewing area covered by a faceplate;

capturing images positioned in front of said faceplate using an imaging subsystem,
said imaging system adapted to follow head movements of said user, said
imaging subsystem uses a camera capable of capturing images using imaging
techniques selecting from the group consisting of analog, digital, infrared,
laser, and a combination of said imaging techniques, said camera selected from
the group consisting of video camera and still-picture camera;

5 transmitting said images to an image storage system positioned outside said mask and
in close proximity to said user by wireless communication using a wireless
transmitter and a wireless receiver, the wireless receiver capable of receiving
10 said images from said imaging subsystem, said image storage system being
carried by said user and including an image storage subsystem operatively
connected to said wireless receiver, and said wireless communication using
communication techniques selected from the group consisting of radio
frequency communication, infrared communication, acoustic communication,
laser light communication, visible light communication, and a combination of
said communication techniques; and

15 storing said images in a memory of said image storage subsystem where the memory
includes at least one memory device selected from the group of solid state
memories, optical disk storage, laser disk storage, computer disk storage, and
mini-video tape storage.

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